Open Mind

make
a difference

Technology for society

STW annual conference 2016

NWO
Netherlands Organisation for Scientific Research

Ministry of Economic Affairs

Content

Open your Mind

STW invites scientists to submit out-of-the-box research ideas that contribute to sustainable solutions for global societal challenges (along the line with *people, planet, profit*).

At the STW annual conference that will be held on November 24th 2016, STW provides a platform to scientists to discuss global challenges through creativity, passion, and their knowledge of technology. To support scientists to realise their ambition in solving and/or contributing to these global challenges, STW has a total budget of 250,000 euro available. Five Open Mind grants, with a maximum of 50,000 euro (inclusive of Dutch VAT) each and for a period of one year, will be awarded at the STW annual conference 2016 to the best ideas with significant societal impact.

Imagine competing to solve some of the world's most daunting problems. Imagine using technology to combat disease, improve education, create disaster communication systems, empower people with disabilities, or promote environmental sustainability. Open your mind and submit your research idea to STW. Ideas will be pitched at the annual STW conference, competing for one of the Open Mind grants. A short description of the three Open Mind ideas that received funding in 2015 can be found on the STW website (in Dutch) http://www.stw.nl/nl/content/stw-reikt-open-mind-subsidies-uit.

The deadline for submission of project proposals (including a short movie) is September 1st, 14:00 hours.

Conditions

Who can apply?

Eligible for submitting a proposal are scientists (scientific personnel, PhD, postdoc, assistant professors, associate professors and full professors) employed at:
   o   Dutch universities (or with comparable positions at the university medical centres)
   o   KNAW and NWO-institutes
   o   the Netherlands Cancer Institute (NKI)
   o   the Max Planck Institute for Psycholinguistics in Nijmegen
   o   Dubble beamline at the ESFR in Grenoble
   o   NCB Naturalis
   o   Advanced Research Centre for NanoLithography (ARCNL)

Scientists with a temporary appointment should make sure that the host institution guarantees the employment for the duration of the Open Mind project (December 2016 – November 2017). A written agreement signed by the board of the institute should be received by STW no later than November 1st 2016.

Part of the selection procedure is pitching the idea at the STW annual conference and, therefore, applicants should be available and present on November 24th 2016 (at a location to be determined in or near Utrecht) to pitch and discuss their proposal. Funding will be awarded for one year (December 2016 – November 2017). Applicants who are awarded Open Mind funding are requested to present the obtained results on the following annual conference in 2017.

Funding

Open Mind funds project-specific costs of:
1. personnel temporarily appointed to the project at the research institute
2. materials (consumables, small instruments and aids, and domestic travel expenses),
3. foreign travel,

The research institute is responsible for co-funding from direct government funding and hence for the necessary infrastructure and the supervision of project workers. If an applicant/co-applicant cooperates with other institutes not eligible for STW funding, such as TNO or a foreign university, the non-eligible institutes are responsible for their own costs.

In total, the requested budget may not exceed €50,000 (inclusive of Dutch VAT). Budget can be requested for a maximum of one year.

General conditions and IP policy

The general conditions and Intellectual property rights policy of STW apply for Open Mind, excluding article 3 'Reporting of project results'; article 4 'User Committee' and article 12 (subsection 2 bulletpoint 4 'Investments') of the general conditions. These can be downloaded from the STW site at http://www.stw.nl/sites/stw.nl/files/mediabank/General%20Conditions%20STW.pdf. When there is a difference between the call text and the general conditions the call text will prevail. STW encourages that IP rights generated by Open Mind projects are made available to the public for any further development.

Selection

Selection criteria

The research proposal should be in line with the aim of the Open Mind grant and should contribute to solutions for global societal challenges (*people, planet, profit*). Applications should be characterized by their high-risk profile and unconventional research methods.

The proposals will be selected using the four criteria and represented interpretations below, which receive an equal weight in the selection procedure. The scales for the criteria are represented in appendix 3.

Originality
- If the subject is already being researched, are aspects present that make this proposal unique / that set this proposal apart?
- The proposal concerns (combinations of) of technology a current Technology Readiness Level (TRL) of maximally 5 (individual contributing technologies may be more mature, in multidisciplinary proposals it is the combination that counts. See Appendix 2 for further information on TRL).
- The proposal is no logical continuation of ongoing research funded earlier by NWO/STW.
- The proposal is no logical continuation of ongoing research of the applicants or others involved.

Quality project plan

- The proposal can be reasonably finished within one year.
- The proposal can reasonably be executed within the 50.000 Euro budget.
- The subject addressed, the motivation and the solution are all clearly described.
- The written proposal and the video are complementary, but address the main idea of the proposal individually as well.

Urgency
- Would the consequences in one year be severe if this subject isn't addressed immediately?
- The context makes this a good moment to address the subject.
- The societal relevance of the subject is known or recognized in (scientific) literature or policies of governments, non-governmental organisations or companies.
- No simple solution with existing means is yet available or currently known means have significant shortcomings.

Impact
- Support for the importance of the subject is also present outside the scientific community. If not, the proposal addresses how to generate this support (aspects such as use conditions, context, public acceptance or relevant legislation).
- The results of the proposal will offer a significant contribution to change.
- The results contribute directly to change, eliminate bottlenecks or facilitate follow-up (by evoking follow-up projects or involvement of others).
- The proposal can provide a larger impact compared to equal investment in other known means or solutions.

Selection procedure

STW puts together an independent multidisciplinary Assessment Committee consisting of around five to seven members. The members are highly educated and/or experienced people with an affinity for technology development and societal needs. Members are drawn from different sectors of society: universities, large research institutes, industry and other societal sectors. By using this approach, the assessment can take into account the societal needs that science and technology can address.

STW will determine whether the research proposal is eligible for consideration with regards to formal demands. If at least six times more proposals are submitted than can be funded, STW retains the right to perform a preselection. In this case a committee of STW staff will rank all proposals on the four selection criteria individually and discuss their grades in order to establish a ranking. The scales used are represented in appendix 3.

A maximum of thirty proposals will then be selected to be evaluated by the Open Mind Assessment Committee. All proposals will be ranked based on the same four selection criteria by the members. A maximum of 15 research ideas will be selected and provided a platform at the STW annual conference 2016 in order to pitch their idea for the committee (and partially for the public) prior to the closed committee meeting. These ideas may be invited by STW to assist in creating additional media (such as a professional short movie or posters) for public display at the annual conference. In October 2016 candidates will be informed if they are selected to pitch at the conference. Depending on evaluation of the proposals based on the four selection criteria, funding will be awarded at the conference to a

maximum of 5 proposals. The Assessment Committee reserves the right to deviate from the highest ranked proposals for policy reasons, like diversity in topics.

Guidelines for the proposal

Project proposals should be written according to the format in Appendix 1 (maximum 2 A4 pages). The template for the format can be found on www.stw.nl/openmind. In addition to the written application a link to a downloadable short movie (maximum of 2 minutes) should be submitted in which the problem and proposed solution are pitched in an inspiring way. Show us what it is about your research that excites you. We want to be impressed by your scientific challenge, unconventional research methods and expected societal impact.

The language spoken in the short movie should be English. Keep in mind a broad audience: your well-educated neighbour should be able to understand your story. If you make use of audio and/or visuals make sure they are royalty free.

Submitting your proposal via ISAAC

An application can only be submitted to STW/NWO via the online application system ISAAC. **Applications not submitted via ISAAC will not be considered.** A principal applicant must submit his/her application via his/her own ISAAC account. If the principal applicant does not have an ISAAC account yet, then this should be created at least one day before the application is submitted to ensure that any registration problems can be resolved on time. If the principal applicant already has an NWO-account, then he/she does not need to create a new account to submit an application.

Submitting an application consists of two steps:
1. Entering several additional details online in ISAAC.
   Make sure you allow enough time for this.
2. Submitting the application form
   2.1 Download the application form from the electronic application system ISAAC or from STW's website (on the grant page for this programme).
   2.2 Complete the application form.
   2.3 Save the application form as a pdf file and upload it in ISAAC.

For technical questions about the use of ISAAC please contact the ISAAC helpdesk. The ISAAC helpdesk can be contacted from Monday to Friday between 10:00 and 17:00 hours CET on +31 (0)900 696 4747. Unfortunately, not all foreign telecom companies support calling to 0900-numbers. However, you can also submit your question by e-mail to isaac.helpdesk@nwo.nl. You will then receive an answer within two working days.

Contact information

For more information, please contact:

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Appendix 1 Proposal Template

The proposal should be written according to the format below, using the separate **Proposal Template** (the template can be found on www.stw.nl/openmind). The format consists of maximum 2 pages. The text of the proposal is written in English, font Arial 10pt. In addition, a link to a downloadable short movie (maximum of 2 minutes in length) should be submitted as well in which the problem and proposed solution are pitched in an inspiring way that complements the written proposal.

Deadline for submission of project proposals (including short movie) is September 1st , 14:00 hours.

Title
1.   Applicant(s)
State the name, affiliation, position, including % of full-time employment, and contact details, of the applicant(s). A maximum of 2 applicants can apply.

2.   Summary
Give a general summary using a maximum of 200 words.

3.   Project plan
3.1   Societal challenge
Describe the problem or opportunity and its current consequences for society.
3.2   Proposed solution
What does the solution consist of? How will the proposal (help to) solve this problem?
3.3   Milestones and deliverables
Give a clear indication of the step-by-step plan and the intended results over a one year duration.

4.   Originality
4.1   Uniqueness of the proposal
Address the unique characteristics of the proposed solution. If current research on the topic or solutions for the problem exist, distinguish between these and the proposal. Make clear how the proposal isn't a logical continuation of your existing research or any other currently existing research (funded by NWO or STW).

4.2   Technology Readiness level
State the current (before execution of the project) Technology Readiness Level (TRL) of the proposed solution, choosing form the TRL levels below. The current TRL of solutions in Open Mind proposals should be maximally 5. For solutions combining multiple technologies it is the combination that counts, not the TRL of individual contributing technologies which may be more mature.

*The **TRL** scale is a metric for describing the maturity of a technology. The scale consists of 9 levels. Each level characterises the progress in the development of a technology, from the idea (level 1) to the full deployment of the product in the marketplace (level 9). The TRL definitions used for Open Mind are:*

   1. *Level 1 - Basic Research: basic principles are observed and reported*

2. *Level 2 – Applied Research: technology concept and/or application formulated*
3. *Level 3 – Critical function, proof of concept established*
4. *Level 4 – Laboratory testing of prototype component or process*
5. *Level 5 – Laboratory testing of integrated system*
6. *Level 6 – Prototype system verified*
7. *Level 7 – Integrated pilot system demonstrated*
8. *Level 8 – System incorporated in commercial design*
9. *Level 9 – System ready for full scale deployment*
10. *Level beyond 9 - Market introduction*

5. Urgency

Address the urgency of the problem or opportunity. What would be the consequences if the challenge isn't dealt with? Why is this a good moment to face the challenge and implement the solution? How is the relevance of the problem or opportunity recognized or present in (scientific) literature or policies of stakeholders (e.g. governments, companies and/or NGO's)? Why is there no (sufficient) solution using existing means?

6. Impact

Address the impact the proposal aims to achieve. Describe any contextual factors affecting implementation of the solution, e.g. regulation, public perception, culture, etc. How substantial is the contribution of the proposal to change? Does the proposal aim for direct results, eliminating bottlenecks and/or evoking follow up projects or follow up involvement by other stakeholders? Explain how a larger impact is achieved or envisioned than compared to use of or investment in any existing means.

7. Financial planning

Clarify expenditures and summarize the amounts in the table below.

	Costs (euros)
Personnel	
Materials	
Travel	
Total	

8. Movie link

Please provide here a transfer link to your movie file (the short movie can be maximum 2 minutes in length).

Appendix 2 Technology Readiness Level (TRL) scale

The **TRL** scale is a metric for describing the maturity of a technology. The acronym stands for **T**echnology **R**eadiness **L**evel. The scale consists of 9 levels. Each level characterises the progress in the development of a technology, from the idea (level 1) to the full deployment of the product in the marketplace (level 9).

This scale was developed by NASA in the 70s to assess the maturity of a technology prior to integrating this technology into a system. It contained 7 levels at that time. Nowadays, 9 levels compose the scale. These levels are detailed below.

Level 1 - Basic Research: basic principles are observed and reported
Lowest level of technology readiness. Scientific research begins to be translated into applied research and development. Examples might include fundamental investigations and paper studies.

Level 2 – Applied Research: technology concept and/or application formulated
Once basic principles are observed, practical applications can be formulated. Examples are limited to analytic studies and experimentation.

Level 3 – Critical function, proof of concept established
Active research and development is initiated. Laboratory studies aim to validate analytical predictions of separate components of the technology. Examples include components that are not yet integrated or representative.

Level 4 – Laboratory testing of prototype component or process
Design, development and lab testing of technological components are performed. Here, basic technological components are integrated to establish that they will work together. This is a relatively "low fidelity" prototype in comparison with the eventual system.

Level 5 – Laboratory testing of integrated system
The basic technological components are integrated together with realistic supporting elements to be tested in a simulated environment. This is a "high fidelity" prototype compared to the eventual system.

Level 6 – Prototype system verified
The prototype, which is well beyond that of level 5, is tested in a relevant environment. The system or process demonstration is carried out in an operational environment.

Level 7 – Integrated pilot system demonstrated
Prototype is near, or at, planned operational system level. The final design is virtually complete. The goal of this stage is to remove engineering and manufacturing risk.

Level 8 – System incorporated in commercial design
Technology has been proven to work in its final form under the expected conditions. In most of the cases, this level represents the end of true system development.

Level 9 – System ready for full scale deployment
Here, the technology in its final form is ready for commercial deployment.

Level beyond 9 - Market introduction
The product, process or service is launched commercially, marketed to and adopted by a group of customers (including public authorities).

Appendix 3 Evaluation scales

Originality

1. Excellent
2. Excellent to very good
3. Very good
4. Very good to good
5. Good
6. Good to moderate
7. Moderate
8. Moderate to poor
9. Poor

Quality

1. Excellent
2. Excellent to very good
3. Very good
4. Very good to good
5. Good
6. Good to moderate
7. Moderate
8. Moderate to poor
9. Poor

Urgency

1. Excellent
2. Excellent to very good
3. Very good
4. Very good to good
5. Good
6. Good to moderate
7. Moderate
8. Moderate to poor
9. Poor

Impact

1. Excellent
2. Excellent to very good
3. Very good
4. Very good to good
5. Good
6. Good to moderate
7. Moderate
8. Moderate to poor
9. Poor